

## REMARKS

The specification has been amended at page 10 to include reference to Figs. 4 and 5 where the detailed description describes the construction depicted in these Figures.

Claims 1-8 have been rewritten to provide a more concise description of the invention claimed. Additionally, claims 1 and 7 have been amended to point out the differences of same with the cited prior art. Support for the claim 1 amendment is found at Page 1, lines 7 and 8. Support for the claim amendment is found at page 10, lines 4-13.

Reconsideration of the 35 U.S.C. 102(b) rejection of claims 1 and 3 as being unpatentable over the disclosure of the McLandrich patent is requested. Claim 1 has been amended to recite that the method is for welding a Si-based material containing a single crystal or a polycrystal silicone.

The McLandrich patent discloses fusing single-mode glass fibers. Claim 1 calls for welding of a Si-based material, glass, which is not crystalline. Rather, glass is an amorphous material. The reference does not disclose a welding of the material applicant claims in claim 1 and, accordingly, McLandrich does not anticipate claim 1. For the same reason it cannot anticipate claim 3.

Reconsideration of the 35 U.S.C. 103(a) rejection of claim 2 as being unpatentable over the McLandrich patent taken with the Guyer patent 2,590,173, is requested. That the Guyer patent discloses a water cooled electrode does not add to the teaching absent from McLandrich, and claim 2 which additionally, is dependent from claim 1 is patentable over this art.

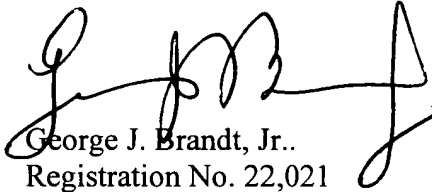
Claims 4-8 depend from or relate back to claim 1. For that reason they are patentable notwithstanding the disclosures of the Wroe patent and the Edberg patent. The failing of the rejection is that the McLandrich patent lacks teaching of welding but one material, and that material is not the specifically required Si-based material containing a single crystal or a polycrystalline silicone.

Claims 1-8 should be allowed, and a further action to that effect is solicited.

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 13-4550.

If the Examiner believes that a telephone conference would be of value, he is respectfully requested to call the undersigned counsel at the number listed below.

Respectfully submitted,

  
George J. Brandt, Jr..  
Registration No. 22,021  
Attorney for Applicants

The Morrison Law Firm  
145 North Fifth Avenue  
Mount Vernon, New York 10550  
(914) 667-6755

Attached: **VERSION WITH MARKINGS TO SHOW CHANGES MADE**

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### IN THE SPECIFICATION:

Page 10, rewrite the paragraph beginning on line 4 to read as follows:

--In order to solve the above problem, there is the need of providing a means for improving an arc directionally. According to an experiment, in a welding arc, it is apparent that a passing area of arc current has a range of diameter 6 to 7 mm. In order to limit a dischargeable area, the water cooling copper sheet and plate 4 is provided (as shown in Figs. 4 and 5) with a projected portion 8 having a diameter D of 7 mm and a height L of 15 mm, at the central portion on its surface. Thus, in the case where Si members 1 and 1 are brought near to arc column 2, the arc is generated on the projected portion 8; therefore, a deflection becomes small. As a result, the arc column does not converge from the projected portion 8, and is possible to position Si members 1 and 1 to an effective current passage.--

### IN THE CLAIMS:

Rewrite claims 1-8 to read as follows;

--1. (Amended) A [welding] method for welding a Si-based material[,]  
containing a single crystal or a polycrystal silicon~~z~~, comprising:  
 generating an arc between [a] first and second electrodes;  
 bringing said Si-based material [close] proximal to an arc column; and  
 performing welding by melting said Si-based material using heat of an

arc plasma.--

--2. (Amended) The [welding] method for welding a Si-based material according to claim 1, [further comprising;] wherein a water cooling plate is used as an anode side electrode of said first and second electrodes.--

--3. (Amended) The [welding] method for welding a Si-based material according to claim 1, wherein a tungsten electrode is used as a cathode side electrode of said first and second electrodes.--

--4. (Amended) The [welding] method for welding a Si-based material according to claim 1, further comprising:  
providing means for improving a directionality of said arc.--

--5. (Amended) The [welding] method for welding a Si-based material according to claim 2, further comprising:  
providing means for improving a directionality of said arc.--

--6. (Amended) The [welding] method for welding a Si-based material according to claim 3, further comprising:  
providing means for improving a directionality of said arc.--

--7. (Amended) The [welding] method for welding a Si-based material according to claim 4, wherein said arc directionality means includes a raised portion[,] on a central surface portion of one of said first and second electrodes[,] and projecting toward [the] a other of said first and second electrodes.--

--8. (Amended) The [welding] method for welding a Si-based material

according to claim 1, wherein:

[after] following said generating step, {an arc] a length of said arc is gradually extended prior to bringing said Si-based material [close to] proximal said arc column.--